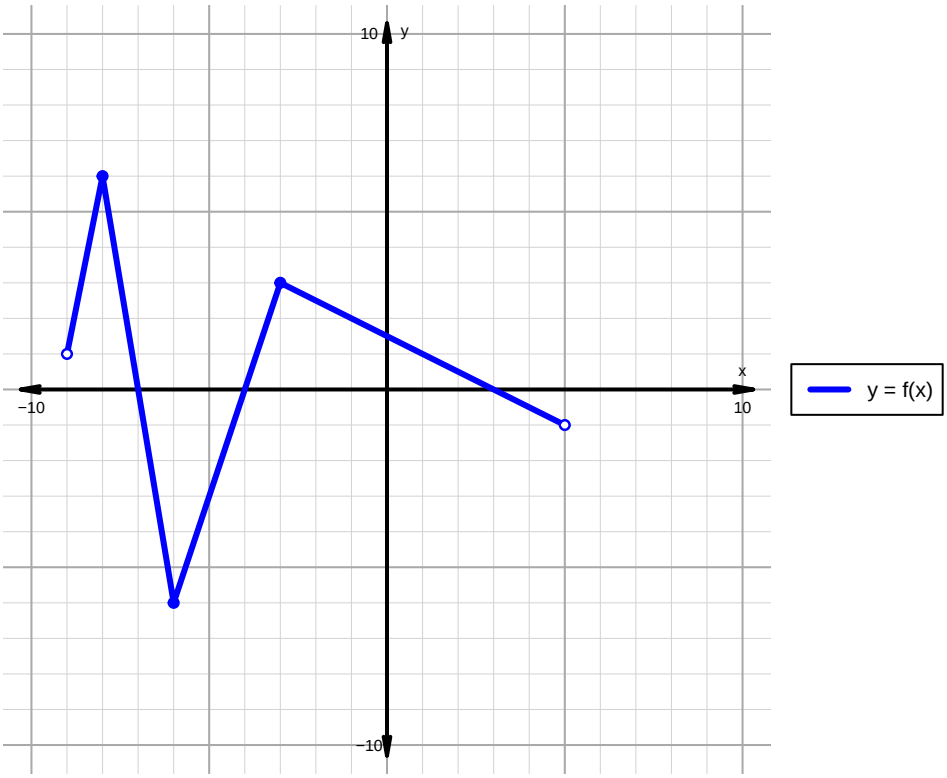
Name: Date:

Intervals, Transformations, and Slope Solution (version 6)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-9,-7)\cup(-4,3)$
Negative	$(-7,-4)\cup(3,5)$
Increasing	$(-9,-8)\cup(-6,-3)$
Decreasing	$(-8,-6)\cup(-3,5)$
Domain	$(-9,5)$
Range	$(-6,6)$

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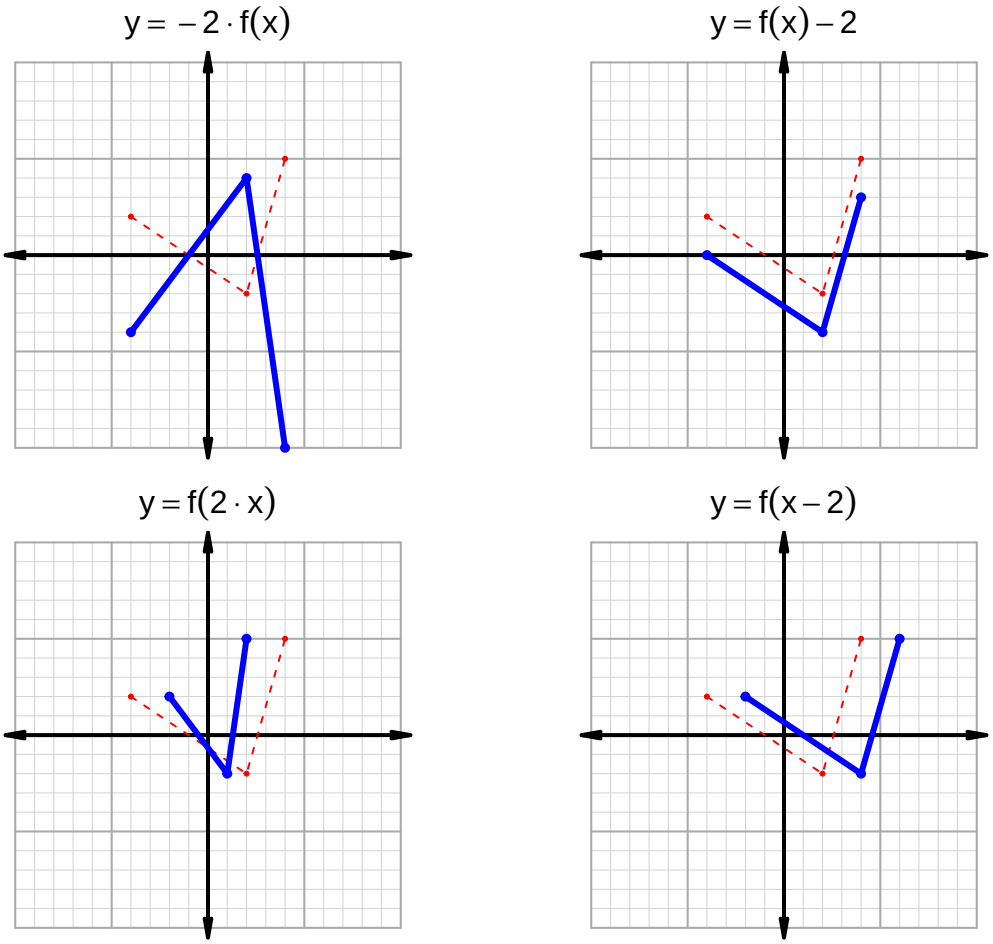
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. Please add the indicated transformed graphs indicated by the equations below using a solid line.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 13$ and $x_2 = 29$. Express your answer as a reduced fraction.

x	$g(x)$
13	44
29	30
30	13
44	29

$\frac{f(29)-f(13)}{29-13} = \frac{30-44}{29-13} = \frac{-14}{16}$

The greatest common factor of -14 and 16 is 2. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-7}{8}$$